

REMARKS

Claims 50-96 were pending in this application at the time the present Office Action was mailed. These claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,396,975 to Wood et al. ("Wood") in view of U.S. Patent No. 6,344,234 to Dalal et al. ("Dalal"). None of the pending claims have been amended or cancelled in this Response.

The undersigned attorney wishes to thank the Examiner for engaging in a telephone conference on August 21, 2003 to discuss the present Office Action, the pending claims, and the applied references. During the telephone conference, the Examiner agreed that the applied references (Wood and Dalal) fail to support a *prima facie* case of obviousness under Section 103 for claims 50-96. The following remarks summarize the points discussed during the August 21 telephone conference.

A. Response to the Section 103 Rejection of Independent Claims 50, 65 and 93, and Claims Depending Therefrom.

Claim 50 is directed to a microelectronic device package that includes a first microelectronic substrate having a first surface with a first connection site, and a second surface facing opposite the first surface. The package further includes a second microelectronic substrate having a first surface with a second connection site, and a second surface facing opposite the first surface. The second microelectronic substrate is coupled to the first microelectronic substrate to form a substrate assembly with the second surface of the second substrate facing toward the first surface of the first substrate. A conformal conductive link is coupled between the first and second connection sites and conforms at least generally to a contour of the substrate assembly immediately adjacent to the conformal conductive link.

As discussed during the August 21 telephone conference, Wood discloses a microeletromechnical structure for switching optical signals. The structure includes a first substrate 12 which carries a movable pop-up mirror 14. A second substrate 20 carries a positioning structure 22 that restricts the motion of the pop-up mirror 14. The first substrate 12 includes an electrical contact 146 and an anchor device 140

electrically coupled to the electrical contact via wire bonding on the backside of the first substrate 12 (Wood at col. 16, lines 16-21). The first substrate 12 and the second substrate 20 are either spaced apart from each other or insulated from each other "to assure electrical isolation between the first and second microelectronic substrates" (Wood at column 6, lines 44-46).

Dalal discloses a method for reflowing solder balls 18 that includes depositing a layer of a low melting point metal (such as tin) atop the solder ball. The metal layer can prevent interdiffusion of the solder and to allow easy removal of chips joined with the solder, without mechanically or thermally affecting other components on a board that carries the chips (Dalal at column 6, lines 59-61 and column 5, lines 40-64).

Wood and Dalal fail to support a *prima facie* case of obviousness with respect to claim 50 for at least the following reasons. First, Wood not only fails to disclose or suggest electrically coupling a first microelectronic substrate to a second microelectronic substrate with a conformal conductive link, but actually teaches away from such an arrangement. For example, Wood's apparatus is specifically disclosed to include a first substrate that is electrically isolated from a second substrate. To the extent that Wood discloses any type of electrical connection, the electrical connection is between features of the same substrate and, rather than being a conformal conductive link as required by claim 50, includes a wire bond. Second, Dalal fails to disclose or suggest two microelectronic substrates and furthermore fails to disclose or suggest a conformal conductive link (or any type of conductive link) between two microelectronic substrates. Accordingly, neither Wood nor Dalal disclose or suggest the features of claim 50, nor do Wood or Dalal provide any motivation for modifying their disclosed designs to include the features of claim 50. Therefore, Wood and Dalal fail to support a *prima facie* case of obviousness with respect to claim 50, and the Section 103 rejection of claim 50 should be withdrawn.

Claims 51-64 depend from claim 50. Accordingly, these claims include inter alia, the features described above. The Section 103 rejection of these claims should

therefore be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

Claim 65 is directed to a microelectronic device package that includes features generally similar to those described above with reference to claim 50, and further recites a conductive link formed from a first portion of conductive material and a second portion of conductive material sequentially disposed on the first portion. Accordingly, Wood and Dalal, described above with reference to claim 50, also fail to support a *prima facie* case of obviousness with respect to claim 65 and therefore the Section 103 rejection of claim 65 should be withdrawn.

Claims 66-73 depend from claim 65. Accordingly, these claims include, inter alia, the features described above with reference to claim 63. The Section 103 rejection of these claims should therefore be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

Claim 93 is directed to an electronic device having a housing and a microelectronic device package positioned within the housing. The microelectronic device package includes features generally similar to those described above with reference to claim 50. Accordingly, for the reasons discussed above and for the additional features of claim 93, Wood and Dalal fail to support a *prima facie* case of obviousness under Section 103 with respect to claim 93. The Section 103 rejection of claim 93 should accordingly be withdrawn.

Claims 94-96 depend from claim 93. Accordingly, the Section 103 rejection of these claims should be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

B. Response to the Section 103 Rejection of Claim 74 and Claims Depending Therefrom

Claim 74 is directed to a microelectronic device assembly that includes a wafer having a plurality of non-singulated first microelectronic substrates, each with a first surface having a first connection site and a second surface facing opposite the first

surface. The assembly further includes a plurality of second microelectronic substrates, each having a first surface with a second connection site and a second surface facing opposite the first surface. The second microelectronic substrates are coupled to the first microelectronic substrates while the first microelectronic substrates are non-singulated, with the first surface of each first substrate facing toward the second surface of a corresponding one of the second substrates. A conductive link is connected between the first and second connection sites.

Wood and Dalal were described above with reference to claim 50. Neither Wood nor Dalal discloses or suggests a wafer having a plurality of non-singulated first microelectronic substrates which are electrically coupled with a conductive link to a plurality of second microelectronic substrates while the first microelectronic substrates are non-singulated. Nor do either Wood or Dalal provide any motivation for modifying the devices they do disclose to include these features. Therefore, the Section 103 rejection of claim 74 should be withdrawn.

Claims 75-83 depend from claim 74. Accordingly, the Section 103 rejection of these claims should be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

C. Response to the Section 103 Rejection of Claim 84 and Claims Depending Therefrom

Claim 84 is directed to a microelectronic device package that includes a first microelectronic substrate having a first surface with a first connection site and a second surface facing opposite the first surface. The package further includes a second microelectronic substrate having a first surface with a second connection site and a second surface facing opposite the first surface. The first microelectronic substrate is attached to the second microelectronic substrate with the first surface of the first substrate facing the second surface of the second substrate, and with the first and second connection sites facing in at least approximately the same direction to define a microelectronic device assembly. A conductive link is connected between the first and second connection sites. A planform area of the assembly in a plane generally parallel

to the second surface of the first microelectronic substrate has a size and shape at least approximately identical to that of the second surface. Because the planform size and shape of the assembly is the same as that of the first microelectronic substrate, the package can have a reduced size when compared with conventional packages, and can accordingly be more easily incorporated into electronic devices.

Wood and Dalal were described above with reference to claim 50. Neither Wood nor Dalal disclose or suggest a package having an assembly with first and second electrically coupled microelectronic substrates positioned such that a planform area of the assembly has a size and shape at least approximately identical to that of the second surface of the first microelectronic substrate. Therefore, Wood and Dalal fail to support a *prima facie* case of obviousness with respect to claim 84 and the Section 103 rejection of claim 84 should accordingly be withdrawn.

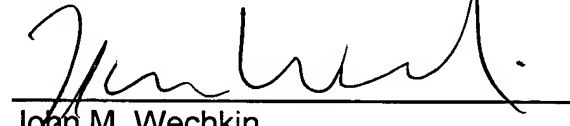
Claims 85-92 depend from claim 84. Accordingly, the Section 103 rejection of these claims should be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

D. Conclusion

In view of the foregoing, the claims pending in the application comply with the requirements of 35 U.S.C. § 112 and patentably define over the applied art. A Notice of Allowance is, therefore, respectfully requested. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-3257.

Respectfully submitted,

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